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BIOTECHNOLOGY  
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**RAW SEQUENCE LISTING**  
**ERROR REPORT**

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number:

09/375,333A

Source:

1600

Date Processed by STIC:

7/22/2003

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry directly to:  
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7<sup>th</sup> Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202  
Or  
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office, Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 04/24/2003



1600

## RAW SEQUENCE LISTING

DATE: 07/22/2003

PATENT APPLICATION: US/09/375,333A

TIME: 13:29:16

Input Set : A:\STK-075.txt

Output Set: N:\CRF4\07222003\I375333A.raw

4 <110> APPLICANT: Oppermann, Hermann  
 5     Tai, Mei-Sheng  
 6     McCartney, John  
 8 <120> TITLE OF INVENTION: Modified TGF-beta Superfamily Proteins  
 10 <130> FILE REFERENCE: STK-075  
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/375,333A  
 C--> 13 <141> CURRENT FILING DATE: 1999-08-16  
 15 <160> NUMBER OF SEQ ID NOS: 124  
 17 <170> SOFTWARE: PatentIn Ver. 2.0  
 19 <210> SEQ ID NO: 1  
 20 <211> LENGTH: 35  
 21 <212> TYPE: PRT  
 22 <213> ORGANISM: Drosophila melanogaster  
 24 <220> FEATURE:  
 25 <223> OTHER INFORMATION: 60-A  
 27 <400> SEQUENCE: 1  
 28 Ala Pro Thr Arg Leu Gly Ala Leu Pro Val Leu Tyr His Leu Asn Asp  
 29    1                   5                   10                   15  
 31 Glu Asn Val Asn Leu Lys Lys Tyr Arg Asn Met Ile Val Lys Ser Cys  
 32                   20                   25                   30  
 34 Gly Cys His  
 35           35  
 38 <210> SEQ ID NO: 2  
 39 <211> LENGTH: 35  
 40 <212> TYPE: PRT  
 41 <213> ORGANISM: Homo sapiens  
 43 <220> FEATURE:  
 44 <223> OTHER INFORMATION: BMP-2  
 46 <400> SEQUENCE: 2  
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 48    1                   5                   10                   15  
 50 Glu Lys Val Val Leu Lys Asn Tyr Gln Asp Met Val Val Glu Gly Cys  
 51                   20                   25                   30  
 53 Gly Cys Arg  
 54           35  
 56 <210> SEQ ID NO: 3  
 57 <211> LENGTH: 35  
 58 <212> TYPE: PRT  
 59 <213> ORGANISM: Homo sapiens  
 61 <220> FEATURE:  
 62 <223> OTHER INFORMATION: BMP-3  
 64 <400> SEQUENCE: 3  
 65 Val Pro Glu Lys Met Ser Ser Leu Ser Ile Leu Phe Phe Asp Glu Asn

Does Not Comply  
Corrected Diskette Needed

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Input Set : A:\STK-075.txt

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66      1              5              10              15
68 Lys Asn Val Val Leu Lys Val Tyr Pro Asn Met Thr Val Glu Ser Cys
69              20              25              30
71 Ala Cys Arg
72              35
75 <210> SEQ ID NO: 4
76 <211> LENGTH: 35
77 <212> TYPE: PRT
78 <213> ORGANISM: Homo sapiens
80 <220> FEATURE:
81 <223> OTHER INFORMATION: BMP-4
83 <400> SEQUENCE: 4
84 Val Pro Thr Glu Leu Ser Ala Ile Ser Met Leu Tyr Leu Asp Glu Tyr
85      1              5              10              15
87 Asp Lys Val Val Leu Lys Asn Tyr Gln Glu Met Val Val Glu Gly Cys
88              20              25              30
90 Gly Cys Arg
91              35
94 <210> SEQ ID NO: 5
95 <211> LENGTH: 35
96 <212> TYPE: PRT
97 <213> ORGANISM: Homo sapiens
99 <220> FEATURE:
100 <223> OTHER INFORMATION: BMP-5
102 <400> SEQUENCE: 5
103 Ala Pro Thr Lys Leu Asn Ala Ile Ser Val Leu Tyr Phe Asp Asp Ser
104      1              5              10              15
106 Ser Asn Val Ile Leu Lys Lys Tyr Arg Asn Met Val Val Arg Ser Cys
107              20              25              30
109 Gly Cys His
110              35
112 <210> SEQ ID NO: 6
113 <211> LENGTH: 35
114 <212> TYPE: PRT
115 <213> ORGANISM: Homo sapiens
117 <220> FEATURE:
118 <223> OTHER INFORMATION: BMP-6
120 <400> SEQUENCE: 6
121 Ala Pro Thr Lys Leu Asn Ala Ile Ser Val Leu Tyr Phe Asp Asp Asn
122      1              5              10              15
124 Ser Asn Val Ile Leu Lys Lys Tyr Arg Asn Met Val Val Arg Ala Cys
125              20              25              30
127 Gly Cys His
128              35
131 <210> SEQ ID NO: 7
132 <211> LENGTH: 36
133 <212> TYPE: PRT
134 <213> ORGANISM: Homo sapiens
136 <220> FEATURE:

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TIME: 13:29:16

Input Set : A:\STK-075.txt

Output Set: N:\CRF4\07222003\I375333A.raw

```

137 <223> OTHER INFORMATION: BMP-9
139 <400> SEQUENCE: 7
140 Val Pro Thr Lys Leu Ser Pro Ile Ser Val Leu Tyr Lys Asp Asp Met
141   1           5           10           15
143 Gly Val Pro Thr Leu Lys Tyr His Tyr Glu Gly Met Ser Val Ala Glu
144           20           25           30
146 Cys Gly Cys Arg
147           35
150 <210> SEQ ID NO: 8
151 <211> LENGTH: 35
152 <212> TYPE: PRT
153 <213> ORGANISM: Homo sapiens
155 <220> FEATURE:
156 <223> OTHER INFORMATION: BMP-10
158 <400> SEQUENCE: 8
159 Val Pro Thr Lys Leu Glu Pro Ile Ser Ile Leu Tyr Leu Asp Lys Gly
160   1           5           10           15
162 Val Val Thr Tyr Lys Phe Lys Tyr Glu Gly Met Ala Val Ser Glu Cys
163           20           25           30
165 Gly Cys Arg
166           35
168 <210> SEQ ID NO: 9
169 <211> LENGTH: 35
170 <212> TYPE: PRT
171 <213> ORGANISM: Homo sapiens
173 <220> FEATURE:
174 <223> OTHER INFORMATION: BMP-11
176 <400> SEQUENCE: 9
177 Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe Asn Asp Lys
178   1           5           10           15
180 Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val Val Asp Arg Cys
181           20           25           30
183 Gly Cys Ser
184           35
187 <210> SEQ ID NO: 10
188 <211> LENGTH: 35
189 <212> TYPE: PRT
190 <213> ORGANISM: Bos taurus
192 <220> FEATURE:
193 <223> OTHER INFORMATION: CDMP-2
195 <400> SEQUENCE: 10
196 Val Pro Thr Lys Leu Thr Pro Ile Ser Ile Leu Tyr Ile Asp Ala Gly
197   1           5           10           15
199 Asn Asn Val Val Tyr Asn Glu Tyr Glu Glu Met Val Val Glu Ser Cys
200           20           25           30
202 Gly Cys Arg
203           35
206 <210> SEQ ID NO: 11
207 <211> LENGTH: 36

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TIME: 13:29:16

Input Set : A:\STK-075.txt

Output Set: N:\CRF4\07222003\I375333A.raw

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208 <212> TYPE: PRT
209 <213> ORGANISM: Gallus gallus
211 <220> FEATURE:
212 <223> OTHER INFORMATION: Dorsalin
214 <400> SEQUENCE: 11
215 Val Pro Thr Lys Leu Asp Ala Ile Ser Ile Leu Tyr Lys Asp Asp Ala
216   1           5           10           15
218 Gly Val Pro Thr Leu Ile Tyr Asn Tyr Glu Gly Met Lys Val Ala Glu
219           20           25           30
221 Cys Gly Cys Arg
222           35
224 <210> SEQ ID NO: 12
225 <211> LENGTH: 35
226 <212> TYPE: PRT
227 <213> ORGANISM: Drosophila melanogaster
229 <220> FEATURE:
230 <223> OTHER INFORMATION: DPP
232 <400> SEQUENCE: 12
233 Val Pro Thr Gln Leu Asp Ser Val Ala Met Leu Tyr Leu Asn Asp Gln
234   1           5           10           15
236 Ser Thr Val Val Leu Lys Asn Tyr Gln Glu Met Thr Val Val Gly Cys
237           20           25           30
239 Gly Cys Arg
240           35
243 <210> SEQ ID NO: 13
244 <211> LENGTH: 35
245 <212> TYPE: PRT
246 <213> ORGANISM: Mus musculus
248 <220> FEATURE:
249 <223> OTHER INFORMATION: GDF-1
251 <400> SEQUENCE: 13
252 Val Pro Glu Arg Leu Ser Pro Ile Ser Val Leu Phe Phe Asp Asn Glu
253   1           5           10           15
255 Asp Asn Val Val Leu Arg His Tyr Glu Asp Met Val Val Asp Glu Cys
256           20           25           30
258 Gly Cys Arg
259           35
262 <210> SEQ ID NO: 14
263 <211> LENGTH: 35
264 <212> TYPE: PRT
265 <213> ORGANISM: Mus musculus
267 <220> FEATURE:
268 <223> OTHER INFORMATION: GDF-3
270 <400> SEQUENCE: 14
271 Val Pro Thr Lys Leu Ser Pro Ile Ser Met Leu Tyr Gln Asp Ser Asp
272   1           5           10           15
274 Lys Asn Val Ile Leu Arg His Tyr Glu Asp Met Val Val Asp Glu Cys
275           20           25           30
277 Gly Cys Gly

```

## RAW SEQUENCE LISTING

DATE: 07/22/2003

PATENT APPLICATION: US/09/375,333A

TIME: 13:29:16

Input Set : A:\STK-075.txt

Output Set: N:\CRF4\07222003\I375333A.raw

```

278          35
280 <210> SEQ ID NO: 15
281 <211> LENGTH: 35
282 <212> TYPE: PRT
283 <213> ORGANISM: Homo sapiens
285 <220> FEATURE:
286 <223> OTHER INFORMATION: GDF-5
288 <400> SEQUENCE: 15
289 Val Pro Thr Arg Leu Ser Pro Ile Ser Ile Leu Phe Ile Asp Ser Ala
290   1          5          10          15
292 Asn Asn Val Val Tyr Lys Gln Tyr Glu Asp Met Val Val Glu Ser Cys
293          20          25          30
295 Gly Cys Arg
296          35
299 <210> SEQ ID NO: 16
300 <211> LENGTH: 35
301 <212> TYPE: PRT
302 <213> ORGANISM: Mus musculus
304 <220> FEATURE:
305 <223> OTHER INFORMATION: GDF-6
307 <400> SEQUENCE: 16
308 Val Pro Thr Lys Leu Thr Pro Ile Ser Ile Leu Tyr Ile Asp Ala Gly
309   1          5          10          15
311 Asn Asn Val Val Tyr Lys Gln Tyr Glu Asp Met Val Val Glu Ser Cys
312          20          25          30
314 Gly Cys Arg
315          35
318 <210> SEQ ID NO: 17
319 <211> LENGTH: 35
320 <212> TYPE: PRT
321 <213> ORGANISM: Mus musculus
323 <220> FEATURE:
324 <223> OTHER INFORMATION: GDF-7
326 <400> SEQUENCE: 17
327 Val Pro Ala Arg Leu Ser Pro Ile Ser Ile Leu Tyr Ile Asp Ala Ala
328   1          5          10          15
330 Asn Asn Val Val Tyr Lys Gln Tyr Glu Asp Met Val Val Glu Ala Cys
331          20          25          30
333 Gly Cys Arg
334          35
336 <210> SEQ ID NO: 18
337 <211> LENGTH: 35
338 <212> TYPE: PRT
339 <213> ORGANISM: Mus musculus
341 <220> FEATURE:
342 <223> OTHER INFORMATION: GDF-9
344 <400> SEQUENCE: 18
345 Val Pro Gly Lys Tyr Ser Pro Leu Ser Val Leu Thr Ile Glu Pro Asp
346   1          5          10          15

```

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<210> SEQ ID NO 37  
<211> LENGTH: 7  
<212> TYPE: PRT  
<213> ORGANISM: Artificial Sequence  
<220> FEATURE:  
<223> OTHER INFORMATION: :  
<400> SEQUENCE: 37

Met Ser Thr Gly Ser Lys Gln  
1 5

*see error explanation on p. 7*

*this error also appears in some subsequent sequences  
(see p. 7)*

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RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/09/375,333A

DATE: 07/22/2003  
TIME: 13:29:17

Input Set : A:\STK-075.txt  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:64; Xaa Pos. 12,26,31,33,37,40,44,46,49,53,54,57,61,68,73,75,81,82,91  
Seq#:64; Xaa Pos. 93  
Seq#:65; Xaa Pos. 2,3,4,5,9,11,13,16,23,26,28,31,33,35,39,40,41,42,44,50,55  
Seq#:65; Xaa Pos. 56,57,58,59,60,61,62,63,66,69,72,74,76,78,81,83,84,85,86  
Seq#:65; Xaa Pos. 87,89,91,92,94,95,97,99,100,104  
Seq#:66; Xaa Pos. 2,3,4,5,6,7,8,9,11,12,13,14,16,17,19,20,23,24,25,26,27,28  
Seq#:66; Xaa Pos. 29,31,33,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50  
Seq#:66; Xaa Pos. 51,52,53,54,55,56,57,58,59,60,61,62,63,64,66,67,68,69,70  
Seq#:66; Xaa Pos. 71,75,76,77,80,82,84,85,86,87,88,89,90,91,92,93,94,95,100  
Seq#:66; Xaa Pos. 101,102,103,105,107  
Seq#:67; Xaa Pos. 2,3,4,5,6,7,8,9,11,12,13,16,17,20,21,23,24,25,26,27,28,31  
Seq#:67; Xaa Pos. 33,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52  
Seq#:67; Xaa Pos. 53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,72,73  
Seq#:67; Xaa Pos. 74,76,77,78,79,80,81,82,83,84,85,86,87,89,90,91,92,93,94  
Seq#:67; Xaa Pos. 95,96,97,98,99,101,102,103,104,105,107,109

Use of <220> Feature(NEW RULES):

Sequence(s) are missing the <220> Feature and associated headings.  
Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial Sequence" or "Unknown". Please explain source of genetic material in <220> to <223> section (See "Federal Register," 6/01/98, Vol. 63, No. 104, pp.29631-32) (Sec.1.823 of new Rules)

Seq#:37,71,74,79,82

*error explanation*